

Teaming up for better transportation

TWO RELATIVELY NEW PROGRAMS based in the UW–Madison College of Engineering are helping prove that “two heads are better than one.” The head count in these cases, though, is dozens or more, with local, state and regional transportation systems reaping the benefits.

The profiles that follow tell just a fraction of what these programs are doing. Together they represent a major investment in practical transportation research and education, and are examples of how connections between WisDOT and the University have grown and strengthened in recent years.

we’re opening data to a larger community,” says Steven Parker, Information Technology Project Manager.

Local officials can now submit a crash data request to the TOPS Lab and expect to receive a report within one to three weeks. Request forms should be on-line this fall. Ongoing improvements will later add mapping capabilities and interactive access to data. For now a data set is provided as a text file in a format (CSV–comma separated value) that easily imports into a spreadsheet program. Using spreadsheet tools the user can freely sort, select, and aggregate the data.

All reported crash records in Wisconsin from 1994 to 2005 are currently in the TOPS Lab crash

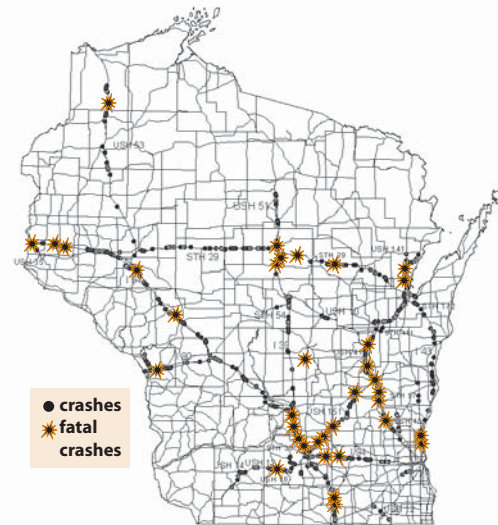
Crash data and more from TOPS Lab

“We’re evolving into a large data warehouse,”

TOPS Lab Web site
www.topslab.wisc.edu

Making local roads safer is a priority for most communities. But where should they put their resources? Which changes will make a road or intersection safer? Looking at crash data can provide some answers, and now the process is easier, thanks to the Wisconsin Traffic Operations and Safety (TOPS) Laboratory.

The TOPS Lab is a joint program of the UW–Madison and WisDOT that started in 2003. Earlier this year it began providing crash summary reports as a service to the WisDOT Bureau of Highway Operations after a long-time employee retired. “We’re attempting to emulate a portion of work that he did, and in the process



Five hotspots were identified

I-39/I-90/I-94
Columbia & Dane Counties

I-94
Dunn County

USH 41
Fond du Lac, Winnebago and Brown Counties

USH 53
La Crosse County

USH 151
Dane & Dodge Counties

TOP What happened—exactly?

This crash photo and related story appeared in the *Wisconsin Traffic Safety Reporter*, v.8 n.3 (2005).

ABOVE & RIGHT Work being done by the TOPS Laboratory in conjunction with Wis-DOT is helping identify “hot-spots” where median crossover accidents are occurring.

Source: *The Wisconsin Traffic Safety Reporter*, v.9 n.1 (2006).

database. Information is available on the location of the crash, vehicles involved, and general crash attributes. To use the data effectively users need to be familiar with the crash locations they are interested in.

"Some local roads have alternate names — like Hwy 100 in Milwaukee County which is also Mayfair Road, Ryan Road, et cetera," says Parker. "If you don't know this you could miss data recorded under a different name." Slight differences in spelling or abbreviations also produce separate groupings. "Eyeballing it is the only way to deal with it," Parker says.

Crash data can help in several ways: understanding safety issues in the community, using engineering and enforcement resources more effectively, and possibly to support a funding application to improve highly hazardous locations. "We're evolving into a large data warehouse," says Todd Szymkowski, Program Manager of the TOPS Lab. "As needs emerge and funding becomes available, we develop software applications to access it."

The Lab has a broad mission to manage traffic and transportation data and build safety analysis tools. Located in the Engineering Building, it also provides student education and offers a variety of traffic operations and safety engineering services.

One recent project investigated 15,000 crash reports to categorize and verify median cross-over crashes in the state. Some others evaluated centerline rumble strips, assessed bridge approach guardrails on low-volume roads, analyzed crashes during snowstorms events, and synthesized ways to measure the quality of highway maintenance.

For more information on the TOPS Lab, go to their Web site. To request a crash report, visit the "Data Clearinghouse Services" page on the TOPS Lab WisTrans Portal Web site: <http://transportal.cee.wisc.edu/services/>

Midwest Regional University Transportation Center (MRUTC)

The MRUTC was created in 1999 when a consortium of leading Midwest universities, led by the UW–Madison, won a grant from the US Department of Transportation. The consortium's mission is "optimizing transportation investment and operations" through research, outreach, and education. State transportation agencies in Wisconsin, Minnesota, Illinois, Indiana, Michigan, and Ohio are active partners and supply most of the required financial match.

"The UTC pulls together the people and organizations across this region who are doing transportation related activities," says Center Director Teresa M. Adams, a professor in Civil and Environmental Engineering at UW–Madison. "We look for opportunities to work together on transportation needs unique to this region, and to leverage our resources to make things happen."

One such project, sponsored and housed by the Center, is the Deer-Vehicle Crash Information Clearinghouse. Deer-vehicle crashes are a huge regional problem — 130,000 reported in 2002, with 45 deaths, 4984 injuries, and over \$200 million in vehicle damage costs. The Clearinghouse collects information and data on the crashes and has analyzed countermeasures. It created a "toolbox"

of countermeasures for decision-makers attempting to reduce these crashes.

Among the three dozen other past and current projects are:

- a study of the impact on pavements and maintenance costs when railroads close spur lines and freight shifts to trucks.
- an investigation of improving road safety by increasing surface friction. New asphalt pavement mix designs with greater skid resistance are being developed.
- a review of how local road agencies use road data. It is documenting best practices in decision-making, and evaluating WISLR and other management systems.

"Much of our focus is on regional issues and the needs of state DOTs, but we also try to benefit local road agencies," says Jason Bittner, Deputy Director of the Center. "We traditionally involve local government representatives and local practitioners in project advisory committees, and we look for projects that partner with local municipalities." The MRUTC cooperates with the TIC and other LTAP centers, gives scholarships to locals, and involves them in Center conferences and outreach activities.

"We look for opportunities to work together on transportation needs unique to this region, and to leverage our resources to make things happen."



MRUTC Web site
<http://www.mrutc.org/>



This deer jumped off an overpass. The driver was okay. A project on deer-vehicle crashes is one of many programs in the Midwest Regional University Transportation Center.

For more information on the MRUTC, see their Web site. The Center is entering its final year under funding from TEA-21, the previous federal transportation act. They have applied for continued support under the current federal authorization for transportation.